

WHAT IS CLAIMED IS

1. A semiconductor device comprising:
 - a first insulating film formed over a semiconductor substrate;
 - a second insulating film formed over the first insulating film;
 - an interconnection structure buried in the first insulating film and in the second insulating film;
 - a first dummy pattern of a first conducting layer buried in at least a surface side of the first insulating film near the interconnection structure; and
 - a second dummy pattern formed of a second conducting layer buried in the second insulating film near the interconnection structure and connected to the first dummy pattern through a via portion.
2. A semiconductor device according to claim 1, wherein
 - the interconnection structure includes a first interconnection pattern buried in the first insulating film and formed of the first conducting layer, and a second interconnection pattern buried in the second insulating film, formed of the second conducting layer and connected to the first interconnection pattern through a via portion.
3. A semiconductor device according to claim 1, wherein
 - the second dummy pattern comprises a plurality of

discrete patterns periodically formed so as to make a pattern density of the second conducting layer substantially uniform in plane.

4. A semiconductor device according to claim 3, wherein

the via portion through which the second dummy pattern is connected to the first dummy pattern is formed in a part of the discrete patterns arranged near the interconnection structure.

5. A semiconductor device according to claim 3, wherein

the first dummy pattern comprises a plurality of discrete patterns periodically formed so as to make a pattern density of the first conducting layer substantially uniform in plane.

6. A semiconductor device according to claim 1, wherein

the first conducting layer and the second conducting layer are formed of a conducting material mainly based on copper.

7. A semiconductor device according to claim 1 to 6, wherein

the first insulating film and the second insulating film are formed of films based mainly on different insulating materials with each other.

8. A semiconductor device according to claim 7, wherein

the first insulating film is mainly formed of a polyallyl ether resin film, and

the second insulating film is mainly formed of a organosilicate glass film.

9. A semiconductor device according to claim 2, wherein

the via portion through which the second interconnection pattern is connected to the first interconnection pattern has a groove-shaped pattern.

10. A semiconductor device according to claim 1, wherein

the interconnection structure is a guard ring, an inductor or a pad.

11. A semiconductor device comprising:

an insulating structure having a plurality of insulating films formed over a semiconductor substrate;

an interconnection structure formed of a plurality of conducting layers buried in the insulating structure; and

a plurality of dummy patterns formed of the same conducting layers as the conducting layers forming the interconnection structure and buried in at least a surface side of the respective insulating films,

the dummy patterns near the interconnection structure being connected with each other through via portions.

12. A method for fabricating a semiconductor device comprising the steps of:

forming a first insulating film over a semiconductor substrate;

burying in at least a surface side of the first insulating film a first interconnection pattern, and a first dummy pattern formed near the first interconnection pattern and formed of the same conducting layer as the first interconnection pattern;

forming a second insulating film over the first insulating film with the first interconnection pattern and the first dummy pattern buried in; and

burying in the second insulating film a second interconnection pattern connected to the first interconnection pattern through a via portion, and a second dummy pattern formed near the second interconnection pattern, formed of the same conducting layer as the second interconnection pattern and connected to the first dummy pattern through a via portion.

13. A method for fabricating a semiconductor device according to claim 12, wherein

in the step of forming the second dummy pattern, the second dummy pattern comprising a plurality of discrete patterns periodically formed are formed so as to make a pattern density of the conducting layer forming the second interconnection pattern and the second dummy pattern substantially uniform in plane.

14. A method for fabricating a semiconductor device according to claim 13, wherein

in the step of forming the second dummy pattern, the

via portion is formed in a part of the discrete patterns arranged near the second interconnection pattern.

15. A method for fabricating a semiconductor device according to claim 12, wherein

the step of forming the second interconnection pattern and the second dummy pattern comprises the steps of:

forming in the second insulating film a first via hole and an interconnection groove for the second interconnection pattern to be buried in, and a second via hole and a groove for the second dummy pattern to be buried in;

depositing a conducting film mainly formed of copper on the second insulating film with the interconnection groove, the first via hole, the groove and the second via hole formed in; and

removing the conducting film above the second insulating film to form the second interconnection pattern of the conducting film, buried in the interconnection groove and the first via hole and form the second dummy pattern of the conducting film, buried in the groove and the second via hole.

16. A method for fabricating a semiconductor device according to claim 12, further comprising the step of

performing wire bonding to the second interconnection pattern.

17. A method for fabricating a semiconductor device according to claim 12, further comprising the step of:

forming a bump over the second interconnection pattern.

18. A method for fabricating a semiconductor device according to claim 12, wherein

in the step of forming the first insulating film or in the step of forming the second insulating film, a film formed mainly of a polyallyl ether resin is formed.